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State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

December 21, 2015

David McMullin
C.S. Mining LLC
P.O. Box 608
Milford, Utah 84751

Subject: Initial Review of Amended Notice of Intention to Commence Large Mining Operations, C.S. Mining LLC, Hidden Treasure Mine, M/001/0067, Beaver County, Utah

Dear Mr. McMullin:

The Division has completed a review of the referenced amendment to the Notice of Intention to Commence Large Mining Operations which was received on August 12, 2015. The amendment requests a variance from multiple rules in order to permit a final dump configuration with terraces and angle-of-repose slopes that would not require regrading. Due to the higher priority Copper Ranch intermediate pit amendment received on August 28, 2015, the review of this variance request amendment was postponed.

For the Division to consider a variance to the rules, specific information must be provided per R647-4-112, including justification for the variance and alternate methods or measures to be utilized which must be consistent with the Utah Mined Land Reclamation Act. The attached comments identify areas where the Division needs additional information as they consider this variance request.

Based on the discussions in the October 13, 2015, meeting where the variance request was discussed, the Division understands CS Mining would be revising its variance request. Although the comments attached to this letter may no longer apply to the proposal you intend to submit, they should provide guidance for the type of information required for a variance.

Please contact Peter Brinton at 801-538-5258 or me at 801-538-5261 if you have questions about this review. Thank you for your cooperation.

Sincerely,

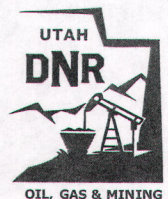
Paul B. Baker
Minerals Program Manager

PBB: pnb: eb

Attachment: Review

cc: Ed Ginouves, BLM-Cedar City (UTU-82071); eginouves@blm.gov

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Initial Review
Page 2 of 4
M/001/0067
December 21, 2015

**1st REVIEW OF SLOPE VARIANCE AMENDMENT TO NOTICE OF INTENTION
TO COMMENCE LARGE MINING OPERATIONS**

**CS Mining LLC
Hidden Treasure Mine
M/001/0067
October 14, 2015**

General Comments:

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
1	General	The Notice should be formatted to easily incorporate additional revisions and amendments.		
2	General	The Division may have additional comments based on the responses to this review. Please attempt to provide a complete, technically adequate submittal.		
3	General	In the meeting held October 13, 2015, revegetation was discussed, as well as the operator establishing test plots. The Division recommends test plots with various slope aspects (N, S, E, W). The Division also recommends monitoring the test plots starting in year 1 to document germination success, weed invasion, replacement of weedy species with desirable ones, etc. This would be valuable information for both the operator, the Division, and the industry in general.	mpb	
4	General	In connection with comment 3 above, the Division will assist the operator in developing seed mixes to address slope aspects, i.e., a seed mix for N&E-facing slopes and one for S&W-facing slopes.	mpb	

R647-4-112 - Variance (List all variances requested and make a finding if approving.)

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
5	Page 84, Omission	Per rule R647-4-112.1.11, cite the rules from which a variance is requested. It appears the proposed reclamation plan would require variances for at least the following four rules: 1) R647-4-111.5 (Land Use) 2) R647-4-111.6 (Slopes) 3) R647-4-111.12 (Topsoil Redistribution) 4) R647-4-111.13 (Revegetation)	pnb	
6	Page 84, Omission	Per rule R647-4-112.1.12, for each individual variance request in the comment above, identify the variances requested, and describe the areas that would be affected. Identify the affected acreages.	pnb	
7	Page 84, Omission	For each of the proposed variances from the rules identified in comment 5 above, the following information is required, and must be consistent with the act: 1) Provide justification for the variance (per R647-4-112.1.13), and 2) Identify alternate methods or measures to be utilized (per R647-4-112.1.14).	pnb	

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
8	Page 84, omission	Discuss how the alternate methods or measures proposed are consistent with the following objectives (Title 40-8-12) of the Act: 1) to return the land, concurrently with mining or within a reasonable amount of time thereafter, to a stable ecological condition compatible with past, present, and probable future local land uses; 2) to minimize or prevent present and future on-site or off-site environmental degradation caused by mining operations to the ecologic and hydrologic regimes and to meet other pertinent state and federal regulations regarding air and water quality standards and health and safety criteria; and 3) to minimize or prevent future hazards to public safety and welfare.	pnb	
9	Page 84, Omission	Identify how the alternate methods or measures proposed are consistent with the following definition from the Act: “Reclamation” means actions performed during or after mining operations to shape, stabilize, revegetate, or treat the land affected in order to achieve a safe, stable, ecological condition and use which will be consistent with local environmental conditions.	pnb	
10	Page 84, 111.6 (Slopes)	For clarity as to what is being requested, change the phrase in the second sentence of the second paragraph which currently states, “...beyond that disturbed during dump construction,” to, “...beyond that disturbed during approved dump construction.” Any approval of variances should correspond to an already approved dump construction and reclamation surety.	pnb	
11	Page 84, Para 2, 111.6 (Slopes)	The Division will reserve the right to evaluate each dump design to determine whether a variance from the slope regrading rule would be appropriate. The text of the proposed variance language relating to future dumps (Paragraph 2, Sentence 2) should reflect the Division’s site-specific approach to approval of dump reclamation methods.	pnb	
12	Page 84, Para 2, 111.6 (Slopes)	Justification for a variance and alternate methods or measures should be provided for or all of the existing dumps for which a variance is requested, not just for the Bawana dump.	pnb	
13	Page 84, para 3, 111.6 (Slopes)	Stable slopes (including angle-of-repose dump slopes) can become unstable under a number of different situations and due to multiple factors. Discuss factors that affect angle of repose dump stability, and explain how factors affecting slope stability would affect stability of the proposed dump slopes. Additional information about dump design is needed, including dimensions of the proposed dumps.	pnb	
14	Page 84, para 3, 111.6 (Slopes)	Discuss the extent of eroded material that would leave the dump slopes. Rule R647-4-111.6 requires sloping to minimize erosion.	pnb	
15	Page 84, para 3, 111.6 (Slopes)	The Division has documented some dump slope erosion on historic dumps in the vicinity of current mining (specifically on the Montreal dump slopes). The statement that no evidence of angle-of-repose dump slope erosion was observed by the operator following heavy rainfall should be removed or qualified.	pnb	

Comment #	Sheet/Page/Map/Table #	Comments	Initials	Review Action
16	Page 84, para 3, 111.6 (Slopes)	Considering erosion on historic dumps, and without additional information, it is feasible that eroded material from the Hidden Treasure dump could be deposited in the drainage channel. Modify the conclusion that normally dry ephemeral stream beds will not receive eroded sediment from dump outcrops.	pnb	
17	Page 84, para 3, 111.6 (Slopes)	More information about the older, graded Bawana dump with rilling should be provided. For example, identify the origin of the erosive flow and the approximate rill depths and spacing, and indicate whether vegetation is established on the graded slopes.	pnb	
18	Page 84, Omission, 111.6 (Slopes)	Indicate how the proposed variance from regrading would result in dumps that are sloped to minimize safety hazards.	pnb	
19	Page 84, Omission, 111.6 (Slopes)	Indicate how the proposed variance from regrading would provide for successful revegetation.	pnb	
20	Page 84, para 4	The seed mix for the angle-of-repose slopes should be dominated by shrub species.	mpb	
21	Page 84, para 4	The first sentence would need to be qualified, since topsoil could physically be placed on at least parts of angle-of-repose slopes.	pnb	
22	Page 84, para 4	Regarding the second sentence, the Division will need a statement from the BLM voicing their opposition to dump slope regrading and consistent with the assertions in this paragraph, if this sentence is to remain in its current form.	pnb	
23	Page 84, para 4	The assertion that invader species growth is enhanced by topsoil placement due to soil quality is probably a lesser factor in vegetation success, and other factors should be addressed. Other factors to consider include the fact that placed soils may also contain significant viable weed seed. It is likely that finer-grained particles also facilitate some weed growth. Unless soil sampling indicates that soil is less suitable for beneficial revegetation than it is for weeds, the statement will need to be modified. The Division understands that a highly alkaline soil horizon is avoided during soil recovery, and that salvaged soils are not chemically prohibitive of revegetation due to the soil horizon that is being avoided.	pnb	
24	Section R647-4-112	Variance: There are cross section diagrams of the dump profiles in the approved NOI that show 3H:1V slopes. However, there are no cross section diagrams supporting the variance request that show the proposed terraces and angle-of-repose slopes. Please provide cross sections of the dumps illustrating the proposed variance showing angle-of-repose slope grades, heights, terrace widths and overall toe-to-crest slopes.	mpb	
25	Section R647-4-112	Please provide some discussion of the particle size range in the dump material that would help justify the variance with regards to slope stability, erosion potential, effects on stormwater infiltration, suitability as plant growth media, etc.	mpb	
26	Omission	Other maps are needed to support the variance request: a reclamation treatments map for the dumps showing where topsoil will and will not be applied, and where seeding will occur; and any maps in the currently approved NOI that would need to be replaced to reflect the variance, if approved.	mpb	